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(54) SHAPE MEMORY COPPER ALLOY

(57)Abstract:

PURPOSE: To obtain the titled alloy consisting of prescribed percentages of Zn, Al, Ti and ≥ 1 kind among Fe, Ni and Co and the balance Cu with inevitable impurities and having superior fatigue rupture resistance and superior ductility, especially martensite phase deformability.

CONSTITUTION: This shape memory Cu alloy consists of, by weight, 10W45% Zn, 1W10% Al, 0.05W3% Ti, 0.05W2% ≥ 1 kind among Fe, Ni and Co, and the balance Cu inevitable impurities. The alloy has high ductility, superior fatigue rupture resistance and superior martensite phase deformability. Electrolytic Cu, electrolytic Zn, high purity Al, pure Ti, a Cu-Fe mother alloy, electrolytic Ni and electrolytic Co are melted as starting materials with a high frequency induction heating furnace, and the molten metal is cast into an ingot. The ingot is hot forged and hot rolled, and the resulting plate is heat-treated by water hardening to obtain the desired shape memory Cu alloy.

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